

ES. Executive Summary

This Executive Summary is intended to provide the reader with a concise summary of the Los Angeles County Metropolitan Transportation Authority (Metro) North Hollywood to Pasadena Bus Rapid Transit Corridor Project (BRT) (Proposed Project or Project) and its potential environmental effects. It contains the purpose of the Draft Environmental Impact Report (EIR), a summary of the environmental review process, the project history, project objectives, a description of the Proposed Project, a summary of environmental impacts and mitigation measures, areas of controversy/issues to be resolved, a comparison of the Proposed Project to alternatives, and a trade-off analysis comparing the Proposed Project and route options.

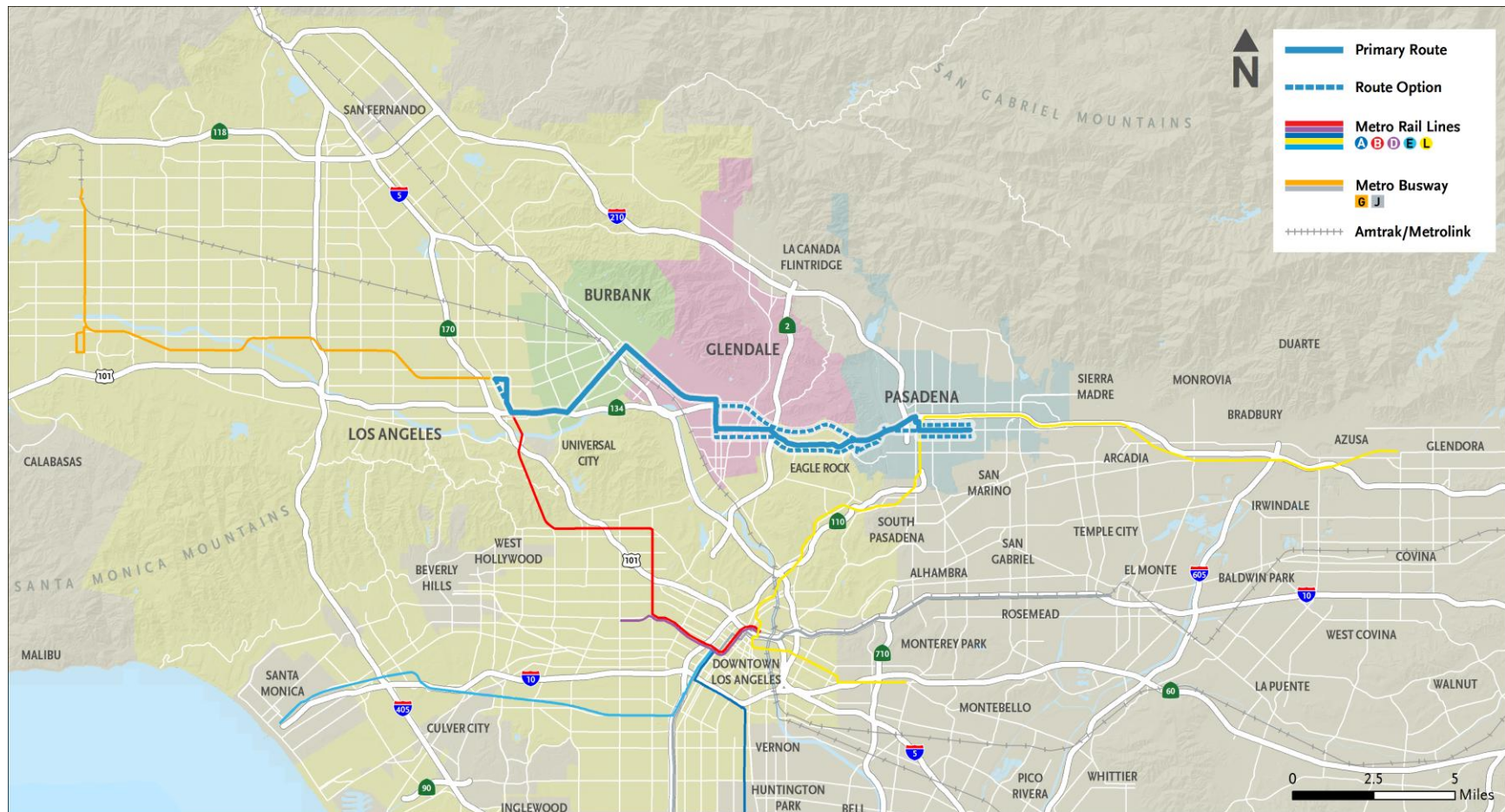
The Proposed Project would provide a BRT service connecting several cities and communities between the San Fernando and San Gabriel Valleys. Specifically, the Proposed Project would consist of a BRT service that runs from the North Hollywood B/G Line (Red/Orange) Station in the City of Los Angeles through the Cities of Burbank and Glendale and into the City of Pasadena ending at Pasadena City College. The Proposed Project would operate along a combination of local roadways and freeway sections with various configurations of mixed-flow and dedicated bus lanes depending on location. **Figure ES-1** shows the regional context of the Project Corridor.

The Proposed Project includes options for the BRT route and configurations. This was necessary due to public feedback during the completion of the Alternatives Analysis and Draft EIR scoping feedback. It was not possible to reach a consensus on one route preferred by Metro, the cities, stakeholders, and general public. Metro determined that all stakeholders and the agency decision-makers would best be informed about the Proposed Project by equally evaluating the potential environmental impacts of multiple routes.

ES.1 PURPOSE OF THIS DRAFT ENVIRONMENTAL IMPACT REPORT

Metro has prepared this Draft EIR to satisfy the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15000, et seq.). The Draft EIR will inform public agency decision-makers and the public of the significant environmental effects of the Proposed Project, as well as possible ways to minimize those significant effects, and reasonable alternatives to the Proposed Project that would avoid or minimize those significant effects. The Draft EIR will also enable Metro to consider environmental consequences when deciding whether to approve the Proposed Project.

Figure ES-1 – Regional Context of the Study Corridor



SOURCE: Terry A. Hayes Associates Inc., 2020.

Metro serves as the lead agency for the Proposed Project and has the principal responsibility for approving the Project. Lead agencies are charged with the duty to avoid or substantially lessen significant environmental impacts of a project, where feasible. In determining whether to approve a project that would result in significant adverse environmental effects, a lead agency has an obligation to balance the economic, social, technological, legal, and other benefits of a project against its significant unavoidable impacts on the environment.

This Draft EIR is an informational document designed to identify the potentially significant impacts of the Proposed Project on the environment; to indicate the manner in which those significant impacts can be minimized; to identify reasonable and potentially feasible alternatives to the Proposed Project that would avoid or reduce the significant impacts; and to identify any significant unavoidable adverse impacts that cannot be mitigated.

ES.2 ENVIRONMENTAL REVIEW PROCESS

In May 2019, an Alternatives Analysis Report, including its findings and recommendations, was presented to the Metro Board of Directors. The Metro Board directed staff to initiate a Draft EIR. In compliance with the CEQA Guidelines Section 15082, a Notice of Preparation (NOP) was prepared and distributed on June 14, 2019, to the State Clearinghouse and June 17, 2019, to various other public agencies and the general public for a 45-day review and comment period. During the initial 45-day review period, Metro extended the scoping period for an additional 15 days – officially ending the scoping period on August 15, 2019. Five scoping meetings were held in July 2019 to facilitate public review and comment on the Proposed Project and the Draft EIR. Metro received a total of 2,584 comments during the public scoping period. Generally, comments received were a mix of both supportive and opposed sentiments toward the Proposed Project.

After the public review and comment period, written responses to all written comments and oral testimony pertaining to environmental issues received during the comment period will be prepared as part of the Final EIR. As required by CEQA, responses to comments submitted by commenting agencies will be distributed to the agencies for review prior to consideration of the Final EIR by Metro's Board.

Upon completion of the Final EIR and other required documentation, the Metro Board may adopt the findings relative to the Proposed Project's environmental effects after implementation of mitigation measures and statement of overriding considerations, certify the Final EIR, and approve the Proposed Project.

Opportunities for the public to provide comments and participate in virtual public hearings are indicated on the following page.

Public Hearings	
Metro will conduct two virtual public hearing to take testimony on the Draft EIR during the public review and comment period. Public hearings will not be in person to promote community safety related to Coronavirus 2019/2020. The presentation may be viewed during the public review period at: https://www.metro.net/projects/noho-pasadena-corridor/	
<u>Virtual public hearings will take place during the following dates and times:</u>	
Date: Thursday, November 12, 2020 Time: 6:00 p.m. – 8:00 p.m. Online link: https://zoom.us/j/93362737314 Telephone: (877) 853-5247 (Toll Free) (888) 788 0099 (Toll Free) (833) 548 0276 (Toll Free) (833) 548 0282 (Toll Free) Webinar ID: 933 6273 7314	Date: Saturday, November 14, 2020 Time: 11:00 a.m. – 1:00 p.m. Online link: https://zoom.us/j/93255094044 Telephone: (833) 548-0276 (Toll Free) (833) 548-0282 (Toll Free) (877) 853-5247 (Toll Free) (888) 788-0099 (Toll Free) Webinar ID: 932 5509 4044
Public Comments	
The public review and comment period for this Draft EIR is from October 26, 2020 to December 10, 2020. During this period, public agencies, organizations, and individuals may submit written comments concerning the adequacy of the Draft EIR to: Scott Hartwell, Project Manager Los Angeles County Metropolitan Transportation Authority One Gateway Plaza, Mail Stop: 99-22-6 Los Angeles, CA 90012 Email: nohopasbrt@metro.net You may also call the North Hollywood Pasadena BRT Corridor Project hotline (213) 418-3228 and leave a message.	

ES.3 PROJECT OBJECTIVES

The Proposed Project would provide improved and reliable transit service to meet the mobility needs of residents, employees, and visitors who travel within the corridor. In addition to advancing the goals of Metro's Vision 2028 Strategic Plan, objectives of the Proposed Project include:

- Advance a premium transit service that is more competitive with auto travel
- Improve accessibility for disadvantaged communities
- Improve transit access to major activity and employment centers
- Enhance connectivity to Metro and other regional transit services
- Provide improved passenger comfort and convenience
- Support community plans and transit-oriented community goals

ES.4 PROJECT HISTORY

The North Hollywood to Pasadena BRT Corridor was identified by Metro's 2013 Countywide Bus Rapid Transit and Street Design Improvement Study as one of the region's most heavily traveled corridors without a premium bus service. This led to the North Hollywood to Pasadena BRT Corridor Technical Study, completed in March 2017, which explored the feasibility and performance of implementing BRT, including dedicated bus lanes, enhanced stations, all-door boarding, and transit signal priority. The BRT Corridor Technical Study identified two initial BRT concepts (Primary Street and Primary Freeway), including multiple route options, as the most promising alternatives to address the transportation challenges within this corridor.

The North Hollywood to Pasadena BRT Corridor Planning and Environmental Study was initiated in August 2018 to further study BRT concepts. Metro launched an extensive public outreach effort to provide project updates and to solicit feedback on the two initial BRT concepts identified in the BRT Corridor Technical Study. This outreach effort included five community meetings in addition to approximately 40 individual briefings with the affected cities' elected officials and other community, business, and neighborhood groups. To broaden the outreach efforts to reach historically underserved communities, the Metro outreach team attended neighborhood events such as street fairs, farmers markets, and music festivals, and shared project information at the North Hollywood Metro B/G Line (Red/Orange) Station.

Field reviews were conducted to evaluate potential routing and station opportunities and constraints, as well as land uses. Concurrently, a comprehensive database of street cross sections, existing transit service characteristics, and other data was assembled and evaluated to inform the screening and evaluation of alternatives in the North Hollywood to Pasadena Alternatives Analysis Report. The results of the initial screening analysis were synthesized into three distinctive refined routes to further study — street-running, freeway-running, and hybrid street/freeway-running. Each of these three routes extended from the Metro B/G Line (Red/Orange) terminus on Lankershim Boulevard and terminated at the Pasadena City College near Colorado Boulevard at Hill Avenue in Pasadena. It was determined that the street-running route best met the Project's Objectives and would achieve the highest number of overall benefits, including ridership potential, connectivity, transit-orientated community opportunities, equity, and environmental benefits. Promising route segments from the other two screened routes were also recommended to be carried forward, resulting in a refined street-running route with options.

The Alternatives Analysis Report describes routes that were eliminated from consideration. Combined with the feedback received from the various communities, several of the initial routing options were eliminated from further consideration — three from the Primary Street Concept and two from the Primary Freeway Concept. Routes that were eliminated from consideration included, Chandler Boulevard (North Hollywood – Burbank), Magnolia Boulevard (North Hollywood – Burbank), Brand Boulevard (Glendale), Burbank Boulevard – Hollywood Way – Hollywood Burbank Airport – Interstate 5, and Fair Oaks Avenue/Raymond Avenue Couplet (Pasadena).

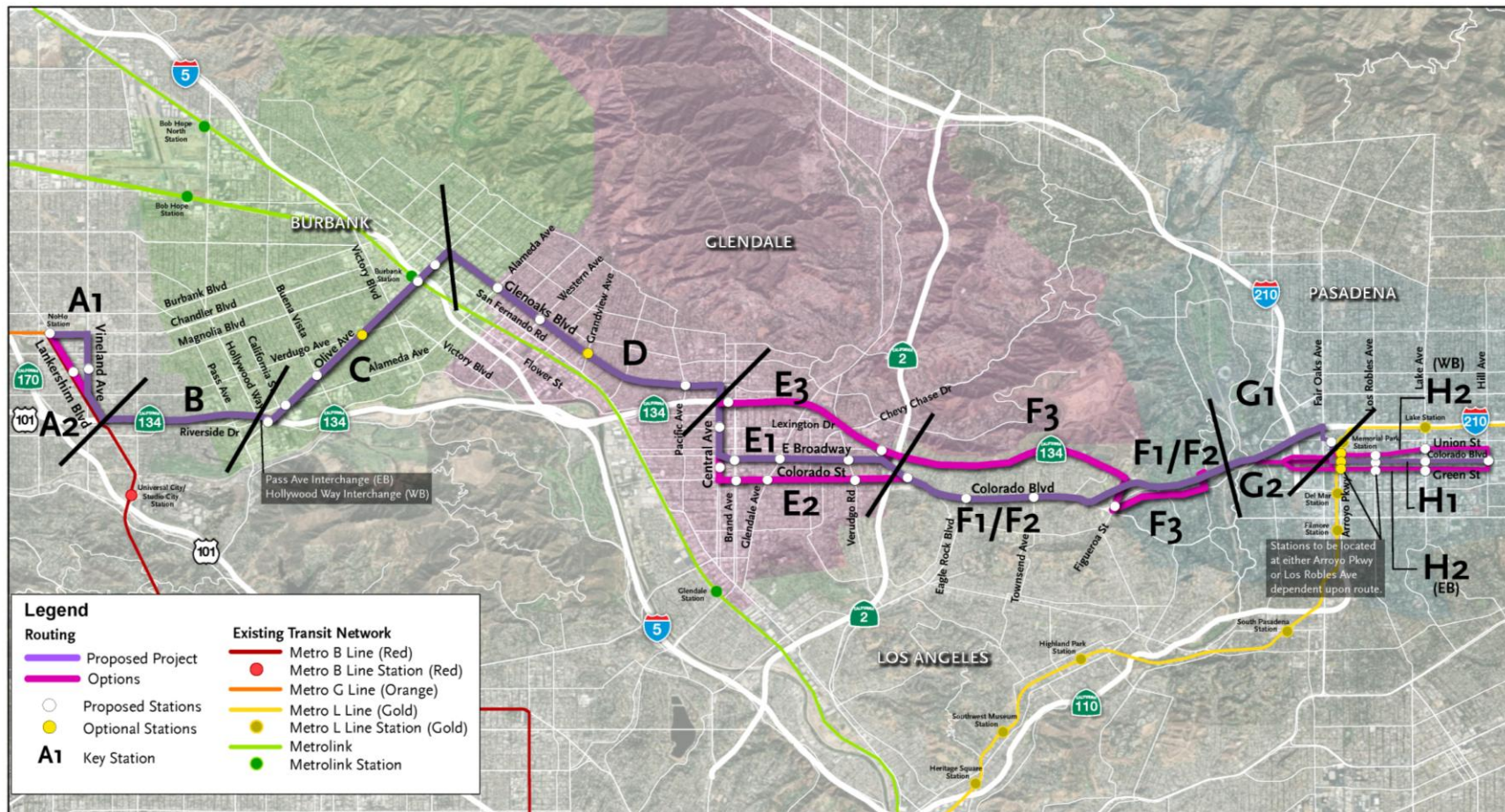
ES.5 PROPOSED PROJECT

The Proposed Project extends approximately 18 miles from the North Hollywood Metro B/G Line (Red/Orange) Station on the west to Pasadena City College on the east. The BRT corridor generally parallels the Ventura Freeway (State Route 134) between the San Fernando and San Gabriel Valleys and traverses the communities of North Hollywood and Eagle Rock in the City of Los Angeles as well as the Cities of Burbank, Glendale, and Pasadena. Potential connections with existing high-capacity transit services include the Metro B Line (Red) and G Line (Orange) in North Hollywood, the Metrolink Antelope Valley and Ventura Lines in Burbank, and the Metro L Line (Gold) in Pasadena. The Project Area includes several dense residential areas as well as many cultural, entertainment, shopping and employment centers, including the North Hollywood Arts District, Burbank Media District, Downtown Burbank, Downtown Glendale, Eagle Rock, Old Pasadena and Pasadena City College.

The Proposed Project would generally include dedicated bus lanes where there is adequate existing street width, while operating in mixed traffic within the City of Pasadena. BRT service would operate in various configurations depending upon the characteristics of the roadways. Route options including in one segment, bus lane configuration options, are evaluated in the EIR in response to input received during completion of the Alternatives Analysis and EIR scoping period: It was not possible to reach a consensus on one route preferred by Metro, the cities, stakeholders, and general public. Metro determined that Metro decision-makers and all stakeholders would best be informed about the Proposed Project by equally evaluating the potential environmental impacts of multiple routes.

Figure ES-2 shows the Proposed Project and route options. **Table ES-1** provides the bus lane configurations for each route segment of the Proposed Project and route options.

Figure ES-2 – Proposed Project with Route Options



SOURCE: Terry A. Hayes Associates Inc., 2020.

Table ES-1 – Route Segments

Key	Segment	From	To	BRT Lane Configuration	Stations
A1 (Project)	Lankershim Blvd.	N. Chandler Blvd.	Chandler Blvd.	Mixed-Flow	Western Terminus at North Hollywood Metro Station with connection to Metro B Line (Red) and Metro G Line (Orange)
	Chandler Blvd.	Lankershim Blvd.	Vineland Ave.	Side-Running ¹ Mixed-Flow ²	
	Vineland Ave.	Chandler Blvd.	Lankershim Blvd.	Center-Running	Hesby St.
	Lankershim Blvd.	Vineland Ave.	SR-134 Interchange	Center-Running Mixed-Flow ³	
A2 (Option)	Lankershim Blvd.	N. Chandler Blvd.	SR-134 Interchange	Side-Running Curb-Running ⁴	Hesby St.
B (Project)	SR-134 Freeway	Lankershim Blvd.	Pass Ave. (EB) Hollywood Wy. (WB)	Mixed-Flow	
C (Project)	Pass Ave. – Riverside Dr. (EB) Hollywood Wy. – Alameda Ave. (WB)	SR-134 Freeway	Olive Ave.	Mixed-Flow ⁵	
	Olive Ave.	Hollywood Wy. (WB) Riverside Dr. (EB)	Glenoaks Blvd.	Curb-Running	- Riverside Dr. - Alameda Ave. - Buena Vista St. - Verdugo Ave. (optional station) - Olive Avenue bridge over Front St. and Burbank-Downtown Metrolink Station - San Fernando Blvd.
D (Project)	Glenoaks Blvd.	Olive Ave.	Central Ave.	Curb-Running Median-Running ⁶	- Alameda Ave. - Western Ave. - Grandview Ave. (optional station) - Pacific Ave.

Key	Segment	From	To	BRT Lane Configuration	Stations
E1 (Project)	Central Ave.	Glenoaks Blvd.	Broadway	Mixed Flow Side-Running ⁷	Lexington Dr.
	Broadway	Central Ave.	Colorado Blvd.	Side-Running	- Brand Blvd. - Glendale Ave. - Verdugo Rd.
E2 (Option)	Central Ave.	Glenoaks Blvd.	Colorado St.	Mixed-Flow Side-Running ⁷	- Lexington Dr. - Americana Wy.
	Colorado St. – Colorado Blvd.	Central Ave.	Broadway	Side-Running	- Brand Blvd. - Glendale Ave. - Verdugo Rd.
E3 (Option)	Central Ave.	Glenoaks Blvd.	Goode Ave. (WB) Sanchez Dr. (EB)	Mixed-Flow	
	Goode Ave. (WB) Sanchez Dr. (EB)	Central Ave.	Brand Blvd.	Mixed-Flow	Brand Blvd.
	SR-134 ⁸	Brand Blvd.	Harvey Dr.	Mixed-Flow	Harvey Dr.
F1 (Option)	Colorado Blvd.	Broadway	Linda Rosa Ave. (SR-134 Interchange)	Side-Running Center Running ⁹	- Eagle Rock Plaza - Eagle Rock Blvd. - Townsend Ave.
F2 (Project)	Colorado Blvd.	Broadway	Linda Rosa Ave. (SR-134 Interchange)	Side-Running	- Eagle Rock Plaza - Eagle Rock Blvd. - Townsend Ave.
F3 (Option)	SR-134	Harvey Dr.	Figueroa St.	Mixed-Flow	
	Figueroa St.	SR-134	Colorado Blvd.	Mixed-Flow	Colorado Blvd.
	Colorado Blvd.	Figueroa St.	SR-134 via N. San Rafael Ave. Interchange	Mixed-Flow	
G1 (Project)	SR-134	Colorado Blvd.	Fair Oaks Ave. Interchange	Mixed-Flow	
	Fair Oaks Ave.	SR-134	Walnut St.	Mixed-Flow	
	Walnut St.	Fair Oaks Ave.	Raymond Ave.	Mixed-Flow	
	Raymond Ave.	Walnut St.	Colorado Blvd. or Union St./Green St.	Mixed-Flow	Holly St. - Metro L Line (Gold)

Key	Segment	From	To	BRT Lane Configuration	Stations
G2 (Option)	SR-134	Colorado Blvd.	Colorado Blvd. Interchange	Mixed-Flow	
	Colorado Blvd. or Union St./Green St.	Colorado Blvd. Interchange ¹⁰	Raymond Ave.	Mixed-Flow	Arroyo Pkwy. Metro L Line (Gold)
H1 (Project)	Colorado Blvd.	Raymond Ave.	Hill Ave.	Mixed-Flow	- Los Robles Ave.¹¹ - Lake Ave. - Eastern Terminus at Hill Ave. near Pasadena City College
H2 (Option)	Union St. (WB) Green St. (EB)	Raymond Ave. ¹²	Hill Ave.	Mixed-Flow	- Los Robles Ave.¹³ - Lake Ave. - Eastern Terminus at Hill Ave. near Pasadena City College

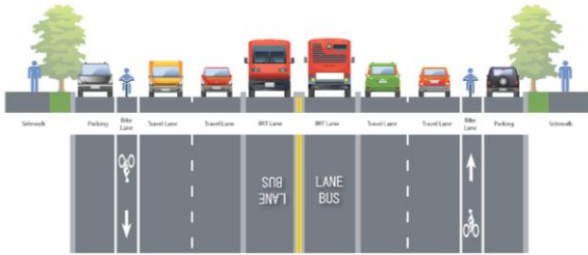
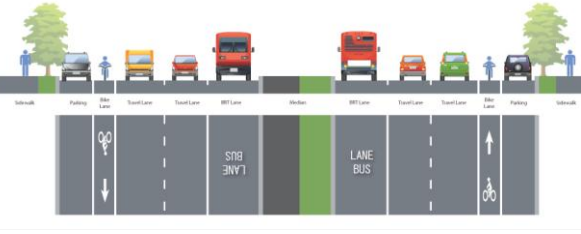
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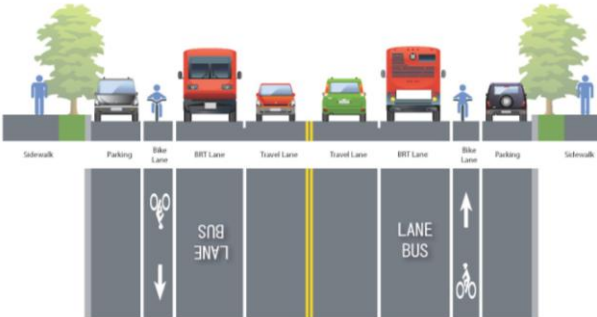
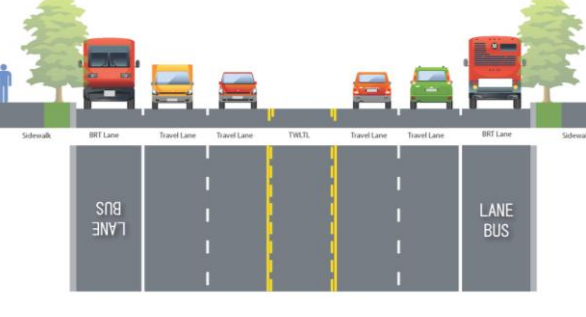
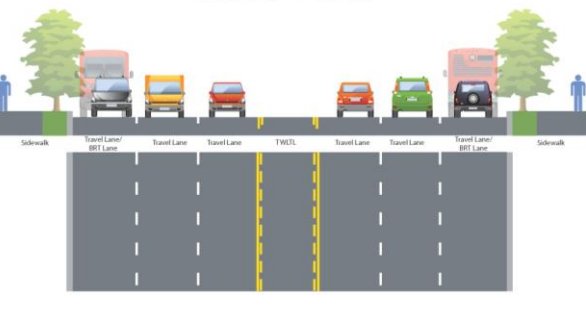
1. Eastbound side-running BRT lane between Fair Ave. and Vineland Ave.
2. Westbound mixed-flow BRT operations between Vineland Ave. and Lankershim Blvd.
3. Southbound mixed-flow BRT operations south of Kling St. and northbound mixed-flow BRT operations south of Hortense St.
4. Side-running BRT lanes transition to curb-running BRT lanes to the south of Huston St.
5. The eastbound BRT on Riverside Dr. transitions from mixed-flow to a curb-running BRT lane to the east of Kenwood Ave.
6. Curb-running BRT lanes transition to median-running BRT lanes at Providencia Ave.
7. Transitions from mixed-flow operations to side-running BRT to the south of Sanchez Dr.
8. Route continues via Broadway to Colorado Blvd./Broadway intersection (Project Route F2 and Route Option F1) or via SR-134 (Route Option F3).
9. Side-running BRT lanes transition to center-running BRT lanes between Ellenwood Dr. and El Rio Ave.
10. Route option is a couplet that would leave/join Colorado Blvd. via St. John Ave.
11. Los Robles Ave. station would not be included if paired with Route Option G2.
12. Route would transition to Colorado Blvd. at St. John Ave. if paired with Route Option G2.
13. Los Robles Ave. station would not be included if paired with Route Option G2.

ES.6 LANE CONFIGURATIONS AND TREATMENTS

The configuration of dedicated bus lanes could be curb-running, side-running alongside existing parking and/or bicycle facilities, and/or center/median-running in the center of the roadway or alongside existing roadway medians. The treatments for the Proposed Project and treatment options being assessed in the Draft EIR are shown in **Table ES-2**.

Table ES-2 – Lane Configuration and Treatments

Center-Running	Median-Running
Center-running bus lanes typically provide two lanes (one for each direction of travel) in the center of the roadway. Center-running bus lanes may be physically separated from adjacent traffic by short raised-curbs to provide an exclusive guideway for BRT vehicles or can simply be delineated with pavement markings. In order to preclude roadway traffic from turning across the bus lanes, a physical barrier such as a short raised-median barrier between the two bus lanes may be provided. Cross-street and turning traffic is usually limited to signalized intersections; pedestrian crossings are signal-controlled as well, using traffic signals or hybrid pedestrian beacons. Left-turns across the busway are usually signal-controlled with turns made from left-turn pockets outboard from the bus lane.	In median-running segments, the BRT service operates within dedicated lanes adjacent to a median (i.e., the left-most lane in the direction of travel). Stations can be placed within the median (for buses with left-hand side doors). Alternatively, the median can be reconfigured in the station area to provide loading islands located outside of the bus lanes (for buses with standard right-hand side doors.) A median-running bus lane may also be physically separated from parallel roadway traffic in a defined guideway through the use of short raised-curbs or rumble strips. Similar to the center-running configuration, cross-street and turning traffic is usually limited to signalized intersections; pedestrian crossings are signal-controlled as well, using traffic signals or hybrid pedestrian beacons. Left-turns across the busway are usually signal-controlled with turns made from left-turn pockets outboard from the bus lane.
	

Side-Running	Curb-Running
Side-running bus lanes dedicate the right-most travel lane to BRT vehicles. Side-running bus lanes are separated from the curb by bicycle lanes, parking lanes, or both, and may allow for right-turns to be made from the curb lane at intersections reducing conflicts with buses. Otherwise, right-turns are allowed to be made from the bus lane. Because station placement is adjacent to the sidewalk, stations are typically developed with bulb outs or curb extensions, enhancing walkability and the pedestrian environment. Station siting and design treatment should minimize conflicts with cyclists, parked vehicles, commercial loading zones/vehicles, and right-turning traffic.	Curb-running bus lanes place the dedicated bus lane immediately adjacent to the curb, which eliminates parking or restricts parking to time periods when the bus lane is not operational. Like the side-running bus lanes configuration, a curb extension may be provided; however, operation along the curb may preclude development of a bulb out. This type of runningway can experience friction or interaction with cyclists, parked vehicles, commercial loading zones/vehicles, and right-turning traffic, which typically merges into the bus lane prior to turning.
	
Mixed-Flow	
Mixed-flow operation may be provided along the BRT route where buses need to transition from one busway configuration to another such as from center-running to side-running, where buses may need to weave into another lane to make a turn, or where traffic operational or geometric constraints make provision of a dedicated lane impractical. In mixed-flow sections, transit priority at intersections may still be provided to facilitate BRT operations.	

Illustrations have been developed to visually show how the Proposed Project would be incorporated into the communities. These illustrations are shown in **Figure ES-3** through **Figure ES-13**.

Figure ES-3 – North Hollywood – Vineland Avenue and Lankershim Boulevard Pre-Project



SOURCE: Kilograph, 2020

Figure ES-4 – North Hollywood – Vineland Avenue and Lankershim Boulevard Post-Project



SOURCE: Kilograph, 2020

Figure ES-5 – Burbank – Olive Avenue Pre-Project



SOURCE: Kilograph, 2020

Figure ES-6 – Burbank – Olive Avenue Post-Project



SOURCE: Kilograph, 2020

Figure ES-7 – Glendale – Glenoaks Boulevard Pre-Project



SOURCE: Kilograph, 2020

Figure ES-8 – Glendale – Glenoaks Boulevard Post-Project



SOURCE: Kilograph, 2020

Figure ES-9 – Glendale – Broadway and Colorado Street Pre-Project



SOURCE: Kilograph, 2020

Figure ES-10 – Glendale – Broadway and Colorado Street Post-Project



SOURCE: Kilograph, 2020

Figure ES-11 – Eagle Rock – Colorado Boulevard Pre-Project



SOURCE: Kilograph, 2020

**Figure ES-12 – Eagle Rock – Colorado Boulevard Post-Proposed Project
(Side-Running Configuration)**



SOURCE: Kilograph, 2020

**Figure ES-13 – Eagle Rock – Colorado Boulevard Post-Option F1
(Center-Running Configuration)**



SOURCE: Kilograph, 2020

ES.7 TRANSIT SIGNAL PRIORITY

TSP expedites buses through signalized intersections and improves transit travel times. Transit priority is available areawide within the City of Los Angeles and is expected to be available in all jurisdictions served by the time the Proposed Project is in service. Basic functions are described below:

- **Early Green:** When a bus is approaching a red signal, conflicting phases may be terminated early to obtain the green indication for the bus.
- **Extended Green:** When a bus is approaching the end of a green signal cycle, the green may be extended to allow bus passage before the green phase terminates.

- **Transit Phase:** A dedicated bus-only phase is activated before or after the green for parallel traffic to allow the bus to proceed through the intersection. For example, a queue jump may be implemented in which the bus departs from a dedicated bus lane or a station ahead of other traffic, so the bus can weave across lanes or make a turn.

ES.8 ENHANCED STATIONS

Metro BRT stations are designed to create a comfortable and safe environment for passengers, fulfilling both a functional and aesthetic need. The stations are distinguishable from competing street elements, yet complementary with the surrounding environments. Station amenities associated with the Proposed Project would be designed using a kit of part approach, similar to Metro rail stations. Although the kit of parts approach is under development by Metro, station elements as described below would be utilized to establish a minimum requirement of baseline of amenities for platforms. At locations with higher ridership or where space allows, additional enhanced amenities would be provided to support the Proposed Project. Stations siting would allow for safe and accessible paths of travel for transit riders including those accessing stations on foot, bike and other rolling modes.

It is anticipated that the stations servicing the Proposed Project may include the following elements:

- Canopy and wind screen
- Seating (benches)
- Illumination, security video and/or emergency call button
- Real-time bus arrival information
- Bike racks
- Monument sign and map displays

Metro is considering near-level boarding which may be achieved by a combination of a raised curb along the boarding zone and/or ramps to facilitate loading and unloading. It is anticipated that BRT buses would support all door boarding with on-board fare collection transponders in lieu of deployment of ticket vending machines at stations.

The Proposed Project includes 35 possible station sites. This includes 21 potential stations along with two optional (future infill) stations along the Proposed Project route, plus an additional 12 potential station locations along route option segments, as indicated in **Table ES 3**. Of the 21 proposed stations, four would be along islands within the street, and the remaining 17 stations would be along the sidewalk, with curb extensions at some locations.

Table ES 3 – Proposed/Optional Stations

Jurisdiction	Proposed Project Stations	Route Option Stations
North Hollywood (City of Los Angeles)	North Hollywood Transit Center (Metro B/G Lines (Red/Orange) Station)	
	Vineland Ave./Hesby St.	Lankershim Blvd./Hesby St.
City of Burbank	Olive Ave./Riverside Dr.	
	Olive Ave./Alameda Ave.	
	Olive Ave./Buena Vista St.	
	Olive Ave./Verdugo Ave. (optional station)	
	Olive Ave./Front St. (on bridge at Burbank-Downtown Metrolink Station)	
	Olive Ave./San Fernando Blvd.	
City of Glendale	Glenoaks Blvd./Alameda Ave.	
	Glenoaks Blvd./Western Ave.	
	Glenoaks Blvd./Grandview Ave. (optional station)	
	Central Ave./Lexington Dr.	Goode Ave. (WB) & Sanchez Dr. (EB) west of Brand Blvd.
		Central Ave./Americana Way
	Broadway/Brand Blvd.	Colorado St./Brand Blvd.
	Broadway/Glendale Ave.	Colorado St./Glendale Ave.
	Broadway/Verdugo Rd.	Colorado St./Verdugo Rd.
Eagle Rock (City of Los Angeles)		SR 134 EB off-ramp/WB on-ramp west of Harvey Dr.
	Colorado Blvd./Eagle Rock Plaza	
	Colorado Blvd./Eagle Rock Blvd.	
	Colorado Blvd./Townsend Ave.	Colorado Blvd./Figueroa St.
City of Pasadena	Raymond Ave./Holly St. ¹ (near Metro L Line (Gold) Station)	
	Colorado Blvd./Arroyo Pkwy. ²	Union St./Arroyo Pkwy. (WB) ² Green St./Arroyo Pkwy. (EB) ²
	Colorado Blvd./Los Robles Ave. ¹	Union St./Los Robles Ave. (WB) ¹ Green St./Los Robles Ave. (EB) ¹
	Colorado Blvd./Lake Ave.	Union St./Lake Ave. (WB) Green St./Lake Ave. (EB)
	Pasadena City College (Colorado Blvd./Hill Ave.)	Pasadena City College (Hill Ave./Colorado Blvd.)

¹With Fair Oaks Ave. interchange routing.

²With Colorado Blvd. interchange routing.

³This location could also accommodate boardings for the Proposed Project.

ES.9 DESCRIPTION OF CONSTRUCTION

Construction of the Proposed Project would likely include a combination of the following elements dependent upon the chosen BRT configuration for the segment: restriping, curb-and-gutter/sidewalk reconstruction, right-of-way (ROW) preparation, pavement improvements, station/loading platform construction, landscaping, and lighting and traffic signal modifications. Generally, construction of dedicated bus lanes consists of pavement improvements including restriping, whereas ground-disturbing activities occur with station construction and other support structures. Existing utilities would be protected or relocated. Due to the shallow profile of construction, substantial utility conflicts are not anticipated, and relocation efforts should be brief. Construction equipment anticipated to be used for the Proposed Project consists of asphalt milling machines, asphalt paving machines, large and small excavators/backhoes, loaders, bulldozers, dump trucks, compactors/rollers, and concrete trucks. Additional smaller equipment may also be used such as walk-behind compactors, compact excavators and tractors, and small hydraulic equipment.

The construction of the Proposed Project is expected to last approximately 24 to 30 months. Construction activities would shift along the corridor so that overall construction activities should be of relatively short duration within each segment. Construction activities would likely occur during daytime hours. Nighttime activities are not anticipated to be needed to construct the Proposed Project. However, at this stage of the planning process and without a construction contractor, it cannot be confirmed if nighttime construction would be necessary for specialized construction tasks. For these specialized construction tasks, it may be necessary to work during nighttime hours to minimize traffic disruptions. Traffic control and pedestrian control during construction would follow local jurisdiction guidelines and the Work Area Traffic Control Handbook. Published under the authority of the WATCH Committee of Public Works Standards, Inc., the Handbook is a leading source of information for traffic control in low-speed/short-duration work areas. It provides quick reference traffic control guidelines for work activities for contractors, cities, counties, utilities and other agencies responsible for such work. Typical roadway construction traffic control methods would be followed including the use of signage and barricades.

It is anticipated that publicly owned ROW or land in proximity to the Proposed Project's alignment would be available for staging areas. Because the Proposed Project is anticipated to be constructed in a linear segment-by-segment method, there would not be a need for large construction staging areas in proximity to the alignment.

ES.10 DESCRIPTION OF OPERATIONS

The Proposed Project would provide BRT service from 4:00 a.m. to 1:00 a.m. or 21 hours per day Sunday through Thursday, and longer service hours (4:00 a.m. to 3:00 a.m.) would be provided on Fridays and Saturdays. The proposed service span is consistent with the Metro B Line (Red). The BRT would operate with 10-minute frequency throughout the day on weekdays tapering to 15 to 20 minutes frequency during weekday evenings (after 7:00 p.m.), and with 15-minute frequency during the day on weekends tapering to 30 minutes on weekend evenings. The

BRT service would be provided on 40-foot zero-emission electric buses with the capacity to serve up to 75 passengers, including 35-50 seated passengers and 30-40 standees, and a maximum of 16 buses are anticipated to be in service along the route during peak operations. Charging infrastructure would be available at the North Hollywood Station and Pasadena City College termini as well as at the Metro El Monte (Division 9) facility, which is where it is expected that buses would be stored.¹ The Proposed Project has an anticipated opening date in 2024.

When operations commence in 2024, it is possible that the fleet would consist of compressed natural gas (CNG) buses until zero-emission electric buses become available. The employment of CNG buses would be temporary and would not represent long-term operational conditions. The Metro Board in 2017 unanimously adopted a motion endorsing a comprehensive plan to transition the agency to a 100 percent zero emission bus fleet by 2030.

ES.11 RIDERSHIP

The Proposed Project is forecast to attract 34,950 boardings in 2042. Transportation modeling was also completed for the route options. It was determined that the route options would attract less ridership, but the associated regional vehicle miles traveled would not significantly change compared to the Proposed Project. The difference in regional vehicle miles traveled was approximately 0.003 percent for all route options.

ES.12 PROJECT COST AND FUNDING

The Proposed Project is funded by Measure M and Senate Bill 1, which provide a total of \$267 million in funding.

Capital Costs

Capital costs for the Proposed Project were estimated based on the Concept Plans. The approach for developing the capital cost estimate used the Standard Cost Category format developed by the Federal Transit Administration, which captures both the “hard” infrastructure construction costs of a project and the “soft” costs like professional services, right-of-way acquisition, contingency, and inflation. An individual estimate was prepared for each route segment (and segment options) to capture and identify the costs associated with each segment, and to assist in the evaluation of the segment options. There are several project costs that are not attributable to an individual segment, therefore an estimate was prepared for “overall” project items, including the bus vehicles and spare parts allowance.

¹ Charging infrastructure is currently being designed for installation at North Hollywood Station for the Metro G Line (Orange) and additional bus service that accesses this station. Charging infrastructure could potentially be accommodated by displacing a number of surface parking spaces at Pasadena City College, with mast arms extending to the identified layover-loading zone along Hill Avenue. At the El Monte facility, Metro will be installing charging infrastructure in conjunction with the systemwide conversion to electric bus operations.

The results of the conceptual capital cost estimates for the Proposed Project and Route Options indicate a range of approximately \$253 million to \$371 million, including contingencies and escalation. The level of detail of the capital cost estimates corresponds with the current level of definition, engineering, and environmental analysis that has been completed for the Project. The level of estimating detail would increase as the project design and engineering advances.

Operations and Maintenance (O&M) Costs

An O&M cost model was developed to estimate the annual cost to operate, maintain and administer the Proposed Project. O&M costs are expressed as the annual total of employee wages and salaries, fringe benefits, contract services, materials and supplies, utilities and other day-to-day expenses incurred in the operation and maintenance of a transit system. O&M costs include costs directly related to the provision of transit service (e.g., bus operators and mechanics), and an allocation of administrative functions to each mode of service that is related to the provision of transit service (e.g., customer service, finance and accounting).

The BRT O&M cost model uses the following service supply characteristics as inputs for estimating annual O&M costs:

- Annual Revenue Bus-Hours
- Annual Revenue Bus-Miles
- Peak Buses
- BRT Station Platforms
- BRT Directional Lane Miles
- BRT Maintenance Facilities (Garages)

The estimated annual cost of operating and maintaining the Proposed Project's BRT service ranges from \$16.6 million to \$18.5 million.

ES.13 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

Areas of Controversy

Known areas of controversy associated with the Draft EIR include:

- **Loss of travel lanes:** Travel lanes would be converted into BRT lanes at various locations along the 18-mile alignment including Glenoaks Boulevard, Central Avenue and Broadway in Glendale.
- **Bicycle lane changes:** Under the Proposed Project, a Class II bicycle lane (striped buffer separating bicycle lanes from vehicle lanes) in the Eagle Rock community of the City of Los Angeles would be converted to a multimodal shared bus/bicycle lane. This change would occur under Route Option F2 on Colorado Boulevard.

- **Medians:** Under the Proposed Project, Vineland Avenue would be reconstructed in the City of Los Angeles and the existing raised medians would be removed in order to accommodate new center-running bus lanes. Median modifications would also occur at intersections along Glenoaks Boulevard in the City of Glendale under the Proposed Project and along Colorado Boulevard in Eagle Rock under Route Option F1. During the scoping period, comments were submitted to Metro opposed to median removal.
- **Construction activities:** Controversial construction effects include business access, air pollution, and noise.
- **Parking:** Parking loss is not an issue addressed in the CEQA Guidelines and therefore not addressed in the Draft EIR. Metro acknowledges that parking loss affects businesses and residents in the corridor. The Project Description of the Draft EIR characterizes locations of potential parking loss. This information will be provided to Metro Board for consideration when considering approval of the Proposed Project.

Issues to be Resolved

Issues to be resolved associated with the Draft EIR include:

- **Maintenance Facility:** Metro has capacity for maintaining Proposed Project buses at multiple existing facilities. The specific facility has not been identified at this time, although the likely location is the existing Metro bus facility in El Monte.
- **Electric Buses:** Metro is committed to a fully electrified bus fleet by 2030. The specific implementation date for the Proposed Project has not been identified and natural gas may be used to power buses in the 2024 opening year.
- **Potential charging station at Pasadena City College:** Metro and Pasadena City College are discussing a charging station at the terminus by the campus. The environmental effects of the potential charging station are considered in this document.

ES.14 COMPARISON OF THE PROPOSED PROJECT AND ROUTE OPTIONS

A high-level analysis has been completed to compare the Proposed Project and the route options. **Table ES-4** shows various metrics, including mobility, transit orientated communities, cost, and transportation facilities. **Table ES-5** shows the potential environmental effects associated with the Proposed Project and the route options. This information would be considered by the Metro Board of Directors when determining if the Proposed Project will be approved for implementation. The metrics are described below:

Table ES-4 – Comparison of Route Options

District	Alt.	Benefits						Costs and Effects				
		Mobility			Transit Oriented Communities			Cost	Transportation Facilities			
		Segment Travel Time	Travel Time Reliability	Station Boardings	Transit Connectivity	First/ Last Mile	Economic Potential	Capital Cost	Traffic & Circulation	Parking	Bicycles	Pedestrians & Streetscape
North Hollywood	A1	✖	✓	✓	✓	✓	✓	✖	✓	✖	✓	✓
	A2	✓	✓	✓	✓	✓	✓	✓	✖	✖	✖	✖
Glendale	E1	✖	✓	✓	✓	✓	✓	✖	✖	✓	✓	✓
	E2	✖	✓	✓	✓	✓	✓	✖	✖	✓	✓	✓
	E3	✓	✖	✖	✖	✖	✖	✓	✓	✓	✓	✓
Eagle Rock	F1	✓	✓	✓	✓	✓	✓	✖	✖	✖	✓	✖
	F2	✓	✓	✓	✓	✓	✓	✖	✓	✓	✖	✓
	F3	✓	✖	✖	✖	✖	✖	✓	✓	✓	✓	✓
Pasadena	G1	✖	✓	✓	✓	✓	✓	✖	✓	✓	✓	✓
	G2	✓	✓	✖	✖	✓	✓	✓	✓	✓	✓	✓
Pasadena	H1	✓	✖	✓	✓	✓	✓	✓	✓	✓	✓	✓
	H2	✓	✓	✖	✓	✓	✓	✓	✓	✓	✓	✓

Notes:

✓ - Best performing route option(s) for the segment

✖ - Poorest performing route option(s) for the segment

SOURCE: Kimley-Horn, 2020.

Mobility Benefits

- Travel Time – The evaluation is based upon the 2042 projected AM peak period segment travel time. Travel time differences of 30 seconds or more were considered.
- Travel Time Reliability – Segments with dedicated bus lanes provide higher reliability. Freeway segments would have low reliability due to peak hour congestion resulting in high variability.
- Station Boardings – The evaluation is based upon the total projected boardings for all stations within a particular route segment.

Transit Oriented Communities Benefits

- Transit Connectivity – Reflects transit integration and opportunities to transfer to other services based upon stations included in the segment.
- First/Last Mile – The evaluation considers walk and bike access to stations within the segment.
- Economic Potential – Reflects the economic potential of stations within the segment considering development patterns, land values and real estate trends, and the potential of the BRT to catalyze community development.

Cost and Effects

- Capital Cost – Indicates route options with higher or lower capital cost.
- Traffic & Circulation – The evaluation considers potential increased congestion associated with conversion of general-purpose lanes to dedicated bus lanes as well as modifications to circulation patterns resulting from reconfiguration of roadways along the BRT route to accommodate bus lanes.
- Parking – Reflects the potential for potential loss of parking due to reconfiguration of the roadway along the BRT route to accommodate bus lanes.
- Bicycles – Indicates route options which may have a beneficial or negative effect on existing and planned bicycle facilities along the BRT route.
- Pedestrians & Streetscape – Reflects potential effects such as sidewalk narrowing to accommodate bus lanes as well as modifications to roadway medians and sidewalk areas which may result in the elimination of existing landscape.

Key observations regarding the indicated trade-offs in each of the five segments where route options are defined are as follows:

- North Hollywood – The proposed project route option A1 via Chandler Boulevard to Vineland Avenue to Lankershim Boulevard is slightly slower and more costly than route option A2 entirely via Lankershim Boulevard but, unlike route option A2, does not reduce the number of through lanes on Lankershim Boulevard north of Camarillo Street. The proposed project route option A1 retains all through lanes and also adds a

Class IV cycle track for bicycles along Vineland Avenue, so A2 was indicated as having poorer performance for bicycles. Route option A2 reduces travel lanes on Lankershim Boulevard north of Camarillo Street and would reduce sidewalk widths along Lankershim Boulevard south of Camarillo Street. There would be some loss of parking associated with either option.

- Glendale – The proposed project route option E1 via Central Avenue to Broadway would provide similar travel time benefits as route option E2 via Central Avenue to Colorado Street. No negative effects were identified for bicycles; however, the proposed project route option E1 would provide a dedicated bus lane along Broadway which would provide more protection for cyclists compared to the existing condition in which cyclists share the road along this route which is designated as a Class III facility in the Glendale bicycle plan. Contrasting either of these route options to route option E3 via Central Avenue connecting to the SR-134 freeway at Brand Boulevard and following the freeway to Harvey Drive, the E3 freeway option would have the fastest travel time and lowest construction cost, but would have relatively poor travel time reliability, low ridership, poor transit connectivity, and poor first/last mile station access.
- Eagle Rock – Route options F1 and F2 would both follow Colorado Boulevard through Eagle Rock, however the configuration for the proposed project, F2, would preserve the travel lanes along the roadway to provide two continuous through lanes along with a shared bus and bicycle lane, which would remove the existing Class II bicycle lane where present (it is discontinuous). Route option F2 would also retain all of the existing parking (with minor losses at stations) and would not conflict with the ATP Cycle 2 improvements under development by the City of Los Angeles. The alternative configuration in route option F1 would retain a narrowed buffered Class II bike lane as well as two continuous through lanes but would result in loss of about one half of the on-street parking as well as the raised landscaped median east of Eagle Rock Boulevard to accommodate side-running bus lanes from Broadway to Ellenwood Drive transitioning to center-running bus lanes from El Rio Avenue to Dahlia Drive (westbound) or Linda Rosa Avenue (eastbound). Left turns across the bus lane would be restricted to major intersections and various minor cross streets; however, turn pockets would be provided for left-turn movements improving safety. By contrast, route option F3, which would be routed via the SR-134 freeway exiting at the Figueroa Street interchange to serve a station at the Figueroa Street / Colorado Boulevard intersection, would have the fastest travel time and lowest construction cost, but would have poorer ridership, less travel time reliability, less transit connectivity and poorer first/last mile station access compared to either route option F1 or F2.
- Pasadena – The proposed project route option G1 via the Fair Oaks Avenue interchange to Walnut Avenue to Raymond Avenue would have a longer travel time compared to route option G2 via the Colorado Boulevard interchange and it would be more costly with an added station along Raymond Avenue at Holly Street adjacent to the Memorial Park L Line (Gold) station. However, because of this station, route option G1 would have higher ridership and transit connectivity compared to route option G2.

The proposed project route option H1 via Colorado Boulevard would have a similar travel time, but lower travel time reliability compared to the route option H2 routed via the Green Street / Union Street couplet; however, route option H1 via Colorado Boulevard would have higher ridership. There would be no other substantial differences.

Table ES-5 provides a summary of the environmental impacts associated with the Proposed Project and each route option. **Table ES-6** provides a summary of the impact statements associated with each route option. This table shows that the environmental impacts in North Hollywood for Route Options A1 and A2 are similar. In Glendale, Route Option E3 would be the least environmentally impactful route while Route Options E1 and E2 would have similar impacts. In Eagle Rock, Route Option F3 would be the least environmentally impactful route. Route Option F2 would be slightly less environmentally impactful than Route Option F1. In Pasadena, Route Options G1, G2, H1, and H2 would all have similar environmental impacts.

ES.15 SIGNIFICANT AND UNAVOIDABLE IMPACTS

No significant and unavoidable impacts have been identified in the Draft EIR.

ES.16 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This Draft EIR has been prepared by Metro to analyze the potential significant environmental impacts of the Proposed Project and to identify mitigation measures capable of avoiding or substantially reducing significant impacts.

Potential impacts of the proposed project have been divided into three categories: significant unavoidable impacts, significant impacts that can be mitigated to less-than-significant levels and impacts that are less than significant or non-existent.

The criteria for the determination of a significant impact in each environmental topic area are discussed in Chapter 3.0 Environmental Impact Analysis and Chapter 4, Other Environmental Considerations. **Table ES-7** provides a summary of the potential environmental impacts, recommended mitigation measures, and the level of significance after mitigation.

Table ES-5 – Summary of Impacts

Proposed Project/Alternative			Environmental Resource									
District	Options		Aesthetics	Air Quality	Biological Resources	Cultural Resources	Energy Resources	Geology and Soils	GHG	Noise	Transportation	Tribal
Proposed Project and Route Options	North Hollywood	A1 (Proposed Project)	LTS	LTS	LTSM BIO-1	LTSM CUL-2	LTS	LTSM GEO-1	NI	LTSM NOI-1 NOI-2	LTSM TRA-1 TRA-2 TRA-3 TRA-4 TRA-6	LTSM CUL-2
		A2	LTS	LTS	LTSM BIO-1	LTSM CUL-2	LTS	LTSM GEO-1	NI	LTSM NOI-1 NOI-2	LTSM TRA-1 TRA-2 TRA-3 TRA-6	LTSM CUL-2
	Glendale	E1 (Proposed Project)	LTSM CUL-1	LTS	LTSM BIO-1	LTSM CUL-1 CUL-2	LTS	LTSM GEO-1	NI	LTSM NOI-1 NOI-2	LTSM TRA-1 TRA-2 TRA-3 TRA-4 TRA-6	LTSM CUL-2
		E2	LTSM CUL-1	LTS	LTSM BIO-1	LTSM CUL-1 CUL-2	LTS	LTSM GEO-1	NI	LTSM NOI-1 NOI-2	LTSM TRA-1 TRA-2 TRA-3 TRA-4 TRA-6	LTSM CUL-2
		E3	NI	LTS	NI	NI	LTS	LTSM GEO-1	NI	LTS	LTSM TRA-1 TRA-2 TRA-3 TRA-6	NI

Proposed Project/Alternative			Environmental Resource									
District		Options	Aesthetics	Air Quality	Biological Resources	Cultural Resources	Energy Resources	Geology and Soils	GHG	Noise	Transportation	Tribal
Proposed Project and Route Options	Eagle Rock	F1	LTSM VIS-1 VIS-2	LTS	LTSM BIO-1	LTSM CUL-2	LTS	LTSM GEO-1	NI	LTSM NOI-1 NOI-2	LTSM TRA-1 TRA-2 TRA-3 TRA-4 TRA-5 TRA-6	LTSM CUL-2
		F2 (Proposed Project)	LTS	LTS	LTSM BIO-1	LTSM CUL-2	LTS	LTSM GEO-1	NI	LTSM NOI-1 NOI-2	LTSM TRA-1 TRA-2 TRA-3 TRA-4 TRA-6	LTSM CUL-2
		F3	LTS	LTS	NI	LTSM CUL-2	LTS	LTSM GEO-1	NI	LTS	LTSM TRA-1 TRA-2 TRA-3 TRA-6	LTSM CUL-2
	Pasadena	G1 (Proposed Project)	LTS	LTS	LTSM BIO-1	LTSM CUL-2	LTS	LTSM GEO-1	NI	LTSM NOI-1 NOI-2	LTSM TRA-1 TRA-2 TRA-3 TRA-6	LTSM CUL-2
		G2	LTS	LTS	LTSM BIO-1	LTSM CUL-2	LTS	LTSM GEO-1	NI	LTSM NOI-1 NOI-2	LTSM TRA-1 TRA-2 TRA-3 TRA-6	LTSM CUL-2

Proposed Project/Alternative			Environmental Resource									
Proposed Project and Route Options	District	Options	Aesthetics	Air Quality	Biological Resources	Cultural Resources	Energy Resources	Geology and Soils	GHG	Noise	Transportation	Tribal
	Pasadena	H1 (Proposed Project)	LTS	LTS	LTSM BIO-1	LTSM CUL-2	LTS	LTSM GEO-1	NI	LTSM NOI-1 NOI-2	LTSM TRA-1 TRA-2 TRA-3 TRA-6	LTSM CUL-2
		H2	LTS	LTS	LTSM BIO-1	LTSM CUL-2	LTS	LTSM GEO-1	NI	LTSM NOI-1 NOI-2	LTSM TRA-1 TRA-2 TRA-3 TRA-6	LTSM CUL-2
	No Project Alternative			NI	NI	NI	NI	NI	NI	NI	NI	NI
Alternative 2			NI	LTS	LTS	LTS	LTS	NI	NI	LTS	LTS	NI

Notes: NI – No impact, LTS – Less-than-significant impact, LTSM – Less-than-significant impact with Mitigation

SOURCE: Terry A. Hayes Associates, Inc., 2020.

Table ES-6 – Summary of Impact Statements

District	Options	Impact Level			
		No Impact	Less-than-Significant Impact	Less-than-Significant Impact with Mitigation	Significant and Unavoidable Impact
North Hollywood	A1	1	3	6	0
	A2	1	3	6	0
Glendale	E1	1	2	7	0
	E2	1	2	7	0
	E3	5	3	2	0
Eagle Rock	F1	1	2	7	0
	F2	1	3	6	0
	F3	2	4	4	0
Pasadena	G1	1	3	6	0
	G2	1	3	6	0
Pasadena	H1	1	3	6	0
	H2	1	3	6	0

SOURCE: Terry A. Hayes Associates, Inc., 2020.

Table ES-7 – Summary of Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
AESTHETICS		
The Proposed Project and Route Option E2 would result in removal of historic streetlights considered important visual resources along Central Avenue and Broadway in Glendale, a potentially significant impact.	CUL-1: Project design related to potentially historic streetlights and station platforms located immediately adjacent (i.e., on or directly in front of) known or potential historical resources identified in the Historical Resources Project Area shall be reviewed by a qualified architectural historian (individual who meets the Secretary of the Interior's Professional Qualification Standards in Appendix A of 36 Code of Federal Regulations Part 61) to determine consistency with the rehabilitation treatment under the Secretary of the Interior's Standards for the Treatment of Historic Properties and confirm the Proposed Project will not cause a substantial adverse change in the significance of a historical resource. The results of this review shall be provided to Metro in a memorandum prepared by the qualified architectural historian conducting the review. This review shall be completed prior to the preparation of final construction documents.	Less Than Significant
Route Option F1 would replace the existing median with the proposed center-running bus lanes and associated station platforms resulting in the removal of an important visual resource to the Eagle Rock community in the City of Los Angeles, a potentially significant impact	VIS-1: Plant material removed from center medians and sidewalks shall be replaced within the existing street/curb right-of-way based on the following requirements: • Plant one new tree and/or shrub for every street tree removed (1:1 tree replacement ratio). Replacement tree species should be the same as that removed or to the satisfaction of the affected jurisdiction's Bureau of Street Services and located within the street right-of-way along station approaches or within the sidewalk. • Plant groundcover using similar replacement species or to the satisfaction of the affected jurisdiction's Bureau of Street Services. • A Landscape Replacement Study shall be prepared by a licensed landscape architect during final design. The study shall identify the location, species, and landscape design elements for all replacement landscaping associated with the Proposed Project and subject to local jurisdiction review. VIS-2: Replacement median, barriers, or other divider shall be enhanced with patterns or decorative features in accordance with the local jurisdiction's streetscape design guidelines and approved by local jurisdiction Street Services bureau or similar entity.	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
BIOLOGICAL RESOURCES		
Construction of the Proposed Project or Route Options A2, E2, F1, G2, and H2 would result in the removal of street trees used by migratory birds and bats for nesting, a potentially significant impact.	BIO-1: To mitigate for construction impacts on special-status bird species, the construction contractor shall implement the following measures: • Construction during bird nesting season (typically February 1 to September 1) would be avoided to the extent feasible. Feasible means capable of being accomplished in a successful manner taking into consideration costs and schedule. • If construction is required during the nesting season, vegetation removal would be conducted outside of the nesting season (typically February 1 to September 1), wherever feasible. Feasible means capable of being accomplished in a successful manner taking into consideration costs and schedule. • If construction, trimming, or removal of vegetation and trees are scheduled to begin during nesting bird season, nesting bird surveys would be completed by a qualified biologist no more than 72 hours prior to construction, or as determined by the qualified biologist, to determine if nesting birds or active nests are present within the construction area. Surveys would be conducted within 150 feet for songbirds and 500 feet for raptors, or as otherwise determined by the qualified biologist. Surveys would be repeated if construction, trimming, or removal of vegetation and trees are suspended for five days or more. • If nesting birds/raptors are found within 500 feet of the construction area, appropriate buffers consisting of orange flagging/fencing or similar (typically 150 feet for songbirds, and 500 feet for raptors, or as directed by a qualified biologist) would be installed and maintained until nesting activity has ended, as determined in coordination with the qualified biologist and regulatory agencies, as appropriate. To mitigate construction impacts on special-status bat species, the construction contractor shall implement the following measures: • Where feasible, tree removal would be conducted in October, which is outside of the maternal and non-active seasons for bats. • During the summer months (June to August) in the year prior to construction, a thorough bat roosting habitat assessment would be conducted of all trees and structures within 100 feet of the construction	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	area. Visual and acoustic surveys would be conducted for at least two nights during appropriate weather conditions to assess the presence of roosting bats. If presence is detected, a count and species analysis would be completed to help assess the type of colony and usage. • No fewer than 30 days prior to construction, and during the non-breeding and active season (typically October), bats would be safely evicted from any roosts to be directly impacted by the Project under the direction of a qualified biologist. Once bats have been safely evicted, exclusionary devices designed by the qualified biologist would be installed to prevent bats from returning and roosting in these areas prior to removal. Roosts not directly impacted by the Project would be left undisturbed. • No fewer than two weeks prior to construction, all excluded areas would be surveyed to determine whether exclusion measures were successful and to identify any outstanding concerns. Exclusionary measures would be monitored throughout construction to ensure they are functioning correctly and would be removed following construction. • If the presence or absence of bats cannot be confirmed in potential roosting habitat, a qualified biologist would be onsite during removal or disturbance of this area. If the biologist determines that bats are being disturbed during this work, work would be suspended until bats have left the vicinity on their own or can be safely excluded under direction of the biologist. Work would resume only once all bats have left the site and/or approval is given by a qualified biologist. • In the event that a maternal colony of bats is found, no work would be conducted within 100 feet of the maternal roosting site until the maternal season is finished or the bats have left the site, or as otherwise directed by a qualified biologist. The site would be designated as a sensitive area and protected as such until the bats have left the site. No activities would be authorized adjacent to the roosting site. Combustion equipment, such as generators, pumps, and vehicles, would not to be parked nor operated under or adjacent to the roosting site. Construction personnel would not be authorized to enter areas beneath the colony, especially during the evening exodus (typically between 15 minutes prior to sunset and one hour following sunset).	

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
CULTURAL RESOURCES		
The Proposed Project and Route Option E2 would result in removal of historic streetlights in along Central Avenue and Broadway in Glendale, a potentially significant impact.	CUL-1: A qualified architectural historian (individual who meets the Secretary of the Interior's Professional Qualification Standards in Appendix A of 36 Code of Federal Regulations Part 61) shall review all project design documents related to historic streetlights and station platforms located immediately adjacent (i.e., on or directly in front of) known or potential historical resources identified in the Historical Resources Project Area to determine consistency with the rehabilitation treatment under the Secretary of the Interior's Standards for the Treatment of Historic Properties to confirm the Proposed Project will not cause a substantial adverse change in the significance of a historical resource. The results of this review shall be provided to Metro in a memorandum prepared by the qualified architectural historian conducting the review, and Metro shall incorporate any design recommendations that would address potential substantial adverse changes in the significance of a historical resource into project design documents prior to the preparation of final construction documents.	Less Than Significant
Ground disturbing activities during construction of the Proposed Project or Route Options A2, E2, F1, G2, and H2 has the potential to encounter previously undiscovered and undocumented archaeological resources, a potentially significant impact.	CUL-2: A Qualified Archeologist, meeting the Secretary of the Interior's Standards for professional archaeology, shall be retained for the Project and will remain on call during all ground-disturbing activities. The Qualified Archaeologist shall ensure that Worker Environmental Awareness Protection (WEAP) training, presented by a Qualified Archaeologist and Native American representative, is provided to all construction and managerial personnel involved with the Proposed Project. The WEAP training shall provide an overview of cultural (prehistoric and historic) and tribal cultural resources and outline regulatory requirements for the protection of cultural resources. The WEAP shall also cover the proper procedures in the event of an unanticipated cultural resource. The WEAP training can be in the form of a video or PowerPoint presentation. Printed literature (handouts) can accompany the training and can also be given to new workers and contractors to avoid the necessity of continuous training over the course of the Proposed Project. If an inadvertent discovery of archaeological materials is made during construction activities, ground disturbances in the area of the find shall be halted and the Qualified Archaeologist shall be notified regarding the discovery. If prehistoric or potential tribal cultural resources are identified, the interested Native American participant(s) shall be notified.	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	The archaeologist, in consultation with Native American participant(s) and the lead agency, shall determine whether the resource is potentially significant as per CEQA (i.e., whether it is an historical resource, a unique archaeological resource, a unique paleontological resource, or tribal cultural resources). If avoidance is not feasible, a Qualified Archaeologist, in consultation with the lead agency, shall prepare and implement a detailed treatment plan. Treatment of unique archaeological resources shall follow the applicable requirements of PRC Section 21083.2. Treatment for most resources would consist of, but would not be limited to, in-field documentation, archival research, subsurface testing, and excavation. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and State repositories, libraries, and interested professionals.	
GEOLOGY AND SOILS		
The Proposed Project and all Route Options pose risks of loss, injury, or death related to seismic conditions including ground shaking, liquefaction, slope failure and landslide, a potentially significant impact.	GEO-1: The Proposed Project shall be designed based on the latest versions of local and State building codes and regulations in order to construct seismically-resistant structures that help counteract the adverse effects of ground shaking. During final design, site-specific geotechnical investigations shall be performed at the sites where structures are proposed within liquefaction-prone designated areas. The investigations shall include exploratory soil borings with groundwater measurements. The exploratory soil borings shall be advanced, as a minimum, to the depths required by local and State jurisdictions to conduct liquefaction analyses. Similarly, the investigations shall include earthquake-induced settlement analyses of the dry substrata (i.e., above the groundwater table). The investigations shall also include seismic risk solutions to be incorporated into final design (e.g., deep foundations, ground improvement, remove and replace, among others) for those areas where liquefaction potential may be experienced. The investigation shall include stability analyses of slopes located within earthquake-induced landslides areas and provide appropriate slope stabilization measures (e.g., retaining walls, slopes with shotcrete faces, slopes re-grading, among others). The geotechnical investigations and design solutions shall follow the “Guidelines for Evaluating and Mitigating Seismic Hazards in California” Special Publication 117A of the California Geologic Service, as well as Metro’s Design Criteria and the latest federal and State seismic and environmental requirements.	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
NOISE		
Construction of the Proposed Project or Route Options A2, E2, F1, G2, and H2 has the potential to generate noise that could increase ambient noise levels by 5 dBA Leq or more which would exceed local significance thresholds within one or more jurisdictions along the BRT alignment, a potentially significant impact.	NOI-1: Where construction cannot be performed in accordance with the FTA 1-hour Leq construction noise standards, elevates existing ambient noise levels by 5 dBA Leq or more, or exceeds other applicable noise thresholds of significance, The construction contractor shall develop a Noise Control Plan demonstrating how noise criteria would be achieved during construction. The Noise Control Plan shall be designed to follow Metro requirements, include construction noise control measures, measurements of existing noise, a list of the major pieces of construction equipment that would be used, and predictions of the noise levels at the closest noise-sensitive receivers (residences, hotels, schools, churches, temples, and similar facilities). The Noise Control Plan shall be approved by Metro prior to initiating localized construction activities. The Noise Control Plan shall require weekly noise monitoring at land used adjacent to construction activities. Noise reducing measures shall be required should the following performance standards be exceeded within the following jurisdictions: • City of Los Angeles: Construction noise levels that exceed the existing ambient exterior noise level at a noise sensitive use by 10 dBA Leq within one hour for construction lasting more than one day, 5 dBA Leq for construction lasting more than 10 days in a three-month period, and any exceedance of 5 dBA during the hours of 9:00 p.m. to 7:00 a.m. Monday through Friday and between 6:00 p.m. to 8:00 a.m. on Saturday or any time Sunday. • City of Burbank: Construction noise levels that exceed the existing ambient exterior noise level between 7:00 a.m. and 7:00 p.m. at a noise sensitive use by 5 dBA Leq for construction lasting more than 10 days in a three-month period. Construction noise levels of any duration that exceed existing ambient exterior noise levels by 5 dBA Leq at a noise sensitive use between the hours of 7:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 5:00 p.m. on Saturday, or at any time on Sunday. • City of Glendale: Construction noise levels that exceed the existing ambient exterior noise level between 7:00 a.m. and 7:00 p.m. at a noise sensitive use by 5 dBA Leq for construction lasting more than 10 days in a three-month period. Construction noise levels of any duration that exceed existing ambient exterior noise levels by 5 dBA Leq at a noise sensitive use between 7:00 p.m. and 7:00 a.m. Monday through Saturday or at any time on Sunday.	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	- City of Pasadena: Construction noise levels that exceed 85 dBA Leq at 100 feet of distance or any duration of noise levels that exceeds existing ambient exterior noise levels by 5 dBA Leq at a noise sensitive use between 7:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 5:00 p.m. on Saturday, or at any time on Sunday. Noise-reducing methods that may be implemented include: - Where construction occurs near noise sensitive land uses, specialty equipment with enclosed engines, acoustically attenuating shields, and/or high-performance mufflers shall be used. - Limit unnecessary idling of equipment. - Install temporary noise barriers or noise-control curtains, where feasible and desirable. - Reroute construction-related truck traffic away from local residential streets and/or sensitive receivers. - Use electric instead of diesel-powered equipment and hydraulic instead of pneumatic tools where feasible.	
Construction of the Proposed Project or Route Options A2, E2, F1, G2, and H2 includes use of heavy equipment that could produce vibration that would exceed the FTA's recommended limit of 0.2 in/sec PPV for any non-engineered timber and masonry buildings within 25 feet of construction activity, a potentially significant impact.	NOI-2: Where equipment such as a vibratory roller, that produces high levels of vibration is used within 25 feet of buildings or typical equipment such as large bulldozer is used within 15 feet of buildings, the 0.2 PPV inches per second vibration damage risk threshold would be exceeded. The Construction Vibration Control Plan shall include mitigation measures to minimize vibration impacts during construction. Recommended construction vibration mitigation measures shall, at a minimum, include: - The contractor shall minimize the use of tracked vehicles. - The contractor shall avoid vibratory compaction within 25 feet of buildings. - The contractor shall monitor vibration levels near sensitive receivers during activities that generate high vibration levels to ensure thresholds are not exceeded.	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
Construction of the Proposed Project or Route Options A2, E2, F1, G2, and H2 could produce vibration from bulldozers and similar equipment that could annoy those in institutional uses (e.g., schools, churches) during the day, and residents at any time during the day or evening. Equipment such as large bulldozers could generate 87 VdB of vibration at 25 feet, which would exceed the 75 VdB significance threshold for occasional events impacting residences and the 78 VdB threshold for institutional daytime land uses, a potentially significant impact.	NOI-3: Where equipment such as a vibratory roller that produces high levels of vibration is used within 105 feet of residences or institutional daytime land uses or equipment such as large bulldozers are used within 65 feet of such uses, the 75 VdB vibration threshold for human annoyance could be exceeded at residences of the 75 VdB threshold at institutional uses. The Construction Vibration Control Plan shall include mitigation measures to minimize vibration impacts during construction. Recommended construction vibration mitigation measures that shall be considered and implemented where feasible include: • The contractor shall minimize the use of tracked vehicles and vibratory equipment. • The contractor shall avoid vibratory compaction. • The contractor shall monitor vibration levels near sensitive receivers during activities that generate high vibration levels to ensure thresholds are not exceeded.	Less Than Significant
TRANSPORTATION		
Construction of the Proposed Project and all Route Options may result in temporary relocation of existing bus stops and temporary delays to transit travel time due to lane closures, a potentially significant impact.	TRA-1: Prior to the initiation of localized construction activities, a Traffic Management Plan compliant with the provisions of the current California Manual on Uniform Traffic Control Devices, the California Traffic Control Handbook and local ordinances, as applicable, shall be developed by Metro and the construction contractor in coordination with the City of Los Angeles, City of Burbank, City of Glendale, and City of Pasadena. Metro shall develop detours as appropriate and communicate any changes to bus service to local transit agencies in advance. Stops shall be relocated in a manner which is least disruptive to transit. If bus stops need to be relocated, warning signs shall be posted in advance of closure along with alternative stop notifications and information regarding the duration of the closure.	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
Construction of the Proposed Project and all Route Options may result in traffic delays and inconvenience due to temporary lane closures temporary, a potentially significant impact.	TRA-2: Prior to the initiation of localized construction activities, a Traffic Management Plan and/or Construction Management Plan compliant with the provisions of the current California Manual on Uniform Traffic Control Devices, the California Traffic Control Handbook and local ordinances, as applicable, shall be developed by Metro and the construction contractor in coordination with the City of Los Angeles, City of Burbank, City of Glendale, and City of Pasadena. The Traffic and/or Construction Management Plan shall include provisions such as: approval of work hours and lane closures, designation of construction lay-down zones, provisions to maintain roadway access to adjoining land uses, use of warning signs, temporary traffic control devices and/or flagging to manage traffic conflicts, and designation of detour routes where appropriate.	Less Than Significant
Construction of the Proposed Project and all Route Options may require temporary closure of sidewalks affecting pedestrian circulation, a potentially significant impact.	TRA-3: Prior to the initiation of localized construction activities, a Traffic Management Plan and/or Construction Management Plan compliant with the provisions of the current California Manual on Uniform Traffic Control Devices, the California Traffic Control Handbook and local ordinances, as applicable, shall be developed by Metro and the construction contractor, in coordination with affected jurisdictions. The plan shall include provisions for wayfinding signage, lighting, and access to pedestrian safety amenities (such as handrails, fences and alternative walkways). Metro shall also work with local municipalities and public works departments to confirm that only one side of the street would be closed at a time. If crosswalks are temporarily closed, pedestrians shall be directed to use nearby pedestrian facilities. Where construction encroaches on sidewalks, walkways and crosswalks, special pedestrian safety measures shall be used such as detour routes and temporary pedestrian shelters. Access to businesses and residences shall be maintained throughout the construction period. These mitigation measures shall be documented in a Traffic Management Plan and/or Construction Management Plan.	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
Construction of the Proposed Project and Route Options E2 and F1 would result in temporary roadway lane closures which may affect existing and planned bicycle facilities, a potentially significant impact	TRA-4: Prior to the initiation of localized construction activities, a Traffic Management Plan and/or Construction Management Plan compliant with the provisions of the current California Manual on Uniform Traffic Control Devices, the California Traffic Control Handbook and local ordinances, as applicable, shall be developed by Metro and the construction contractor, in coordination with the affected jurisdictions. The plan shall identify on-street bicycle detour routes and signage. Metro shall also work with local municipalities and public works departments to accommodate bicycle circulation during construction. Bicycle access to businesses and residences shall be maintained throughout the construction period. These mitigation measures shall be documented in a Traffic Management Plan and/or Construction Management Plan.	Less Than Significant
The Proposed Project would result in the permanent conversion of the existing 10-foot buffered Class II bicycle lanes along Colorado Boulevard to a 12-foot shared bus/bicycle lane which would be inconsistent with the City of Los Angeles Mobility Element 2035, a potentially significant impact.	TRA-5: Prior to completion of Final Design, Metro shall convene a design working group with LADOT to resolve potential bicycle conflicts and identify network enhancements that integrate bicycle and BRT facilities, consistent with Policy 2.6 and Policy 2.9 of the Mobility Plan 2035. The design working group shall include representatives from the LADOT Active Transportation Division, the Los Angeles Bureau of Engineering, and a representative of the Los Angeles Bicycle Coalition. Coordination shall be provided with LADOT and the Active Transportation Division during the preliminary engineering design development phase.	Less Than Significant
Construction of the Proposed Project and all Route Options would result in lane closures, traffic detours, and designated truck routes associated with construction could temporarily result in decreased access and delayed response times for emergency services, a potentially significant impact.	TRA-6: The construction contractor shall provide early notification of traffic disruption to emergency service providers. Work plans and traffic control measures shall be coordinated with emergency responders to prevent impacts to emergency response times. A Traffic Management Plan compliant with the provisions of the current California Manual on Uniform Traffic Control Devices, the California Traffic Control Handbook and local ordinances, as applicable, shall be developed and implemented to minimize impacts on emergency access.	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
TRIBAL CULTURAL RESOURCES		
Ground disturbing activities during construction of the Proposed Project or Route Options A2, E2, F1, G2, and H2 has the potential to impact previously undiscovered buried tribal cultural resources of historical significance, a potentially significant impact.	CUL-2: A Qualified Archeologist, meeting the Secretary of the Interior's Standards for professional archaeology, shall be retained for the Project and will remain on call during all ground-disturbing activities. The Qualified Archaeologist shall ensure that Worker Environmental Awareness Protection (WEAP) training, presented by a Qualified Archaeologist and Native American representative, is provided to all construction and managerial personnel involved with the Proposed Project. The WEAP training shall provide an overview of cultural (prehistoric and historic) and tribal cultural resources and outline regulatory requirements for the protection of cultural resources. The WEAP shall also cover the proper procedures in the event of an unanticipated cultural resource. The WEAP training can be in the form of a video or PowerPoint presentation. Printed literature (handouts) can accompany the training and can also be given to new workers and contractors to avoid the necessity of continuous training over the course of the Proposed Project. If an inadvertent discovery of archaeological materials is made during construction activities, ground disturbances in the area of the find shall be halted and the Qualified Archaeologist shall be notified regarding the discovery. If prehistoric or potential tribal cultural resources are identified, the interested Native American participant(s) shall be notified. The archaeologist, in consultation with Native American participant(s) and the lead agency, shall determine whether the resource is potentially significant as per CEQA (i.e., whether it is an historical resource, a unique archaeological resource, a unique paleontological resource, or tribal cultural resources). If avoidance is not feasible, a Qualified Archaeologist, in consultation with the lead agency, shall prepare and implement a detailed treatment plan. Treatment of unique archaeological resources shall follow the applicable requirements of PRC Section 21083.2. Treatment for most resources would consist of, but would not be limited to, in-field documentation, archival research, subsurface testing, and excavation. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and State repositories, libraries, and interested professionals.	Less Than Significant

SOURCE: Terry A. Hayes Associates Inc., 2020.

ES.17 COMPARISON OF ALTERNATIVES

CEQA requires an analysis of alternatives to the Proposed Project to reduce or eliminate significant impacts associated with project development. In addition to the route options, two alternatives have been identified to the Proposed Project. Alternative 1 is the No Project Alternative. The No Project Alternative is required by CEQA Guidelines Section 15126.6 (e)(2) and assumes that the Proposed Project would not be implemented by Metro. The No Project Alternative allows decision-makers to compare the impacts of approving the Proposed Project with the impacts of not approving the Proposed Project. The No Project Alternative is evaluated in the context of the existing transportation facilities in the Project Area and other capital transportation improvements and/or transit and highway operational enhancements that are reasonably foreseeable.

Alternative 2 would implement improved bus service instead of BRT. The improved bus service would have some BRT characteristics. The service may be as frequent as that proposed for BRT, though its ability to attract as much ridership may be less due to less travel time savings and amenities, meaning a slightly less frequent service would be operated compared to that proposed for the BRT Project. Buses would operate in mixed-flow traffic with Traffic Signal Priority (TSP). Stops would be more frequent than the BRT line, but less frequent than local bus lines (typically every 0.6 miles on average). Travel times would be faster than for local service but slower than the travel times expected from the BRT Project. Stops would occur at existing bus stations and there would be no modifications to the roadway configuration. Physical improvements would be limited to new signs at bus stops as well a shelter with solar lighting, bench and trash receptacle as a minimum level of bus stop amenity. Alternative 2 would not include curb extensions, elimination of parking, or changes to bicycle lanes. This alternative would not require a Maintenance and Storage Facility, as buses would be maintained at existing Metro facilities. Similar to BRT buses, buses would have low-floor design to allow for faster and easier boarding and alighting. The fleet would be equipped for all door boarding.

CEQA Guidelines Section 15126.6 requires that an “environmentally superior” alternative be selected among the alternatives that are evaluated in the Draft EIR. The environmentally superior alternative is the alternative that would be expected to generate the fewest adverse impacts. A summary of the impacts of the No Project Alternative (Alternative 1) and Alternative 2 relative to the Proposed Project and the Route Options is shown **Table ES-5**. The No Project Alternative is considered the environmentally superior alternative because there would be no physical changes to the existing environment resulting in construction or operational impacts. Other transit projects would be constructed to enhance the regional network, although improvements within the Project corridor would be limited and minor related to increased ridership. The No Project Alternative would include the North San Fernando Valley (SFV) BRT Project and the NextGen Bus Plan, in addition to other transportation and land use projects listed in Chapter 5 Cumulative Impact Analysis. The North SFV BRT Improvements Project would provide a new, high-quality bus service between the communities of Chatsworth to the west and North Hollywood to the east. Not constructing and operating the Proposed Project would eliminate the potentially significant impacts associated with the Proposed Project

related to transportation (construction), aesthetics (operations), biological resources (construction), cultural resources (construction and operations), geology and soils (operations), noise (construction), and tribal cultural resources (construction). However, the regional transit network within the Project corridor would not be substantially enhanced by the other transit projects.

If the No Project Alternative is identified as the environmentally superior, CEQA requires selection of the environmentally superior alternative other than the No Project Alternative from among the Proposed Project and the other alternatives evaluated in the Draft EIR. Alternative 2 is the environmentally superior alternative because, as compared to the Proposed Project and Route Options, it avoids or reduces all construction impacts related to transportation, biological resources, cultural resources, noise, and tribal cultural resources. It also avoids or reduces operational impacts related to transportation, aesthetics, cultural resources, and geology and soils.